

12-1997

The 1997 Iowa Corn Yield Test Report, District 2

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Ziegler, K.E.; Vinson, W.H.; and Carroll, D.E., "The 1997 Iowa Corn Yield Test Report, District 2" (1997). *Iowa Corn Yield Tests*. 189.

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The 1997 Iowa Corn Yield Test Report, District 2

Abstract

Results of the Iowa Crop Performance Test - Corn are published to aid Iowa farmers in selecting corn hybrids. This is the 78th consecutive year for the test. These data are first released on the Iowa Crop Improvement Association's home page at <http://agron.iastate.edu/icia/> usually around the end of November. Anyone can access this information and receive the data as soon as they are released. This information can be accessed in three other ways: by modem at (515)-294-8354 and logging in as "guest," through Internet using World Wide Web (WWW) at the URL: <http://www.exnet.iastate.edu>, or through Internet using Telnet to exnet.iastate.edu and logging in as "guest." For additional information, contact Extension Software Service, 110 EES Bldg., Haber Rd., Iowa State University, Ames, Iowa 50011-3070, telephone number (515) 294-8658.

Disciplines

Agriculture



A supplement to the December 13, 1997 issue of *Iowa Farmer Today*

1997

Iowa Crop Performance Test—Corn District 2

Results of the *Iowa Crop Performance Test—Corn* are published to aid Iowa farmers in selecting corn hybrids. This is the 78th consecutive year for the test.

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The next released format of the data is on computer diskettes, which include a hybrid selection computer program described in another section of this report. These diskettes are usually available a week to 10 days after the data are released on the World Wide Web.

The final format is the printed version, which is printed and distributed by *Iowa Farmer Today* in its December 13, 1997 issue. A few days later, the reports also are available from county extension offices.

The presentation of data for the hybrids tested does not imply approval or endorsement by the authors or the agencies sponsoring or conducting the test. Entries in Tables 1 and 2 are designated by brand name and variety.

Use of the Data in Advertisements

Iowa State University and the Iowa Crop Improvement Association desire to maintain the credibility of data from the *Iowa Crop Performance Test—Corn*. Misuse of these data in advertisements can have a negative effect on the perception of the value of these data. For advertising purposes, brand-to-brand comparisons should not be made unless more than one competitor brand is used in the ad and all entries of those brands in a given table are included in the ad. Advertisement statements by an individual company about the performance of its entries can be made as long as they are accurate statements about the data as published with no reference to other companies' hybrids. A statement similar to: "See the official *Iowa Crop Performance Test—Corn* report, Pm-660-(1-7)-97, for details," should be included in the ad.

1997 Procedure

Producers of seed corn and Iowa State University were eligible to enter varieties in the *Iowa Crop Performance Test—Corn*. Each producer was allowed a maximum of nine paid entries per district. All entries had to be available in a quantity of at least 10 bushels of seed.

In 1997, 155 entries were evaluated in this district. Ten of the entries determined to be check hybrids were entered by Iowa State University. In June, survey cards were mailed

to a random sample of corn growers in Iowa. Based on the survey results, the 10 hybrids grown on the most acres in a district are classified as check hybrids for that district. The check hybrids (*) in this report were determined by the 1996 survey. Iowa State University entered a maximum of two check hybrids of any given brand. These entries were given priority over the remaining 145 entries made by seed producers.

Each entry was replicated four times in four-row plots at a planting rate of 29,000 kernels per acre at each location. All locations were machine planted. The center two rows of each plot were harvested with a corn combine. No gleanings or dropped ears were included in yield data. A moisture determination was made from each plot and yields were corrected to 15.0 percent moisture for shelled corn.

Since 1988, data for protein, oil, and starch percentages have been included in the *Iowa Crop Performance Test—Corn* reports. Protein, oil, and starch were measured on an Infratec 1225 near-infrared transmittance analyzer calibrated against accepted chemical methods as done by Woodson-Tenant Labs, Des Moines, Iowa. Dr. Charles R. Hurburgh, Jr. of the ISU Department of Agricultural and Biosystems Engineering was responsible for analyzing the samples. Samples for nutrient analysis were collected from one field in each district. Data presented are averages of the four replicated plots in that field. To be consistent with the yield data, the protein, oil, and starch data were corrected to 15.0 percent moisture.

How Information Is Presented

The agronomic data presented are averages of three locations in 1995, 1996, and 1997. Yield in bushels per acre and percentages of moisture, root lodging, stalk lodging, dropped ears, stand, protein, oil, and starch are shown for all entries in 1997 and for those tested in 1995 and 1996 that were in the 1997 test.

Interpretation of Results

Yield differences due to variation in soil, fertility, moisture availability, insect infestation, and diseases, plus any variation due to planting and harvesting techniques, are identified through statistical analysis. The LSD values for yield shown in Tables 1 and 2 represent, in bushels per acre, the amount of yield variation that could be due to variations in the factors just mentioned. In comparing varieties, yield differences greater than the LSD value can be attributed to genetic differences in the yield potential of these varieties; yield differences less than the LSD value are not statistically different and could have been due to other factors.



Iowa Crop
Improvement
Association

IOWA STATE UNIVERSITY
University Extension

Ames, Iowa

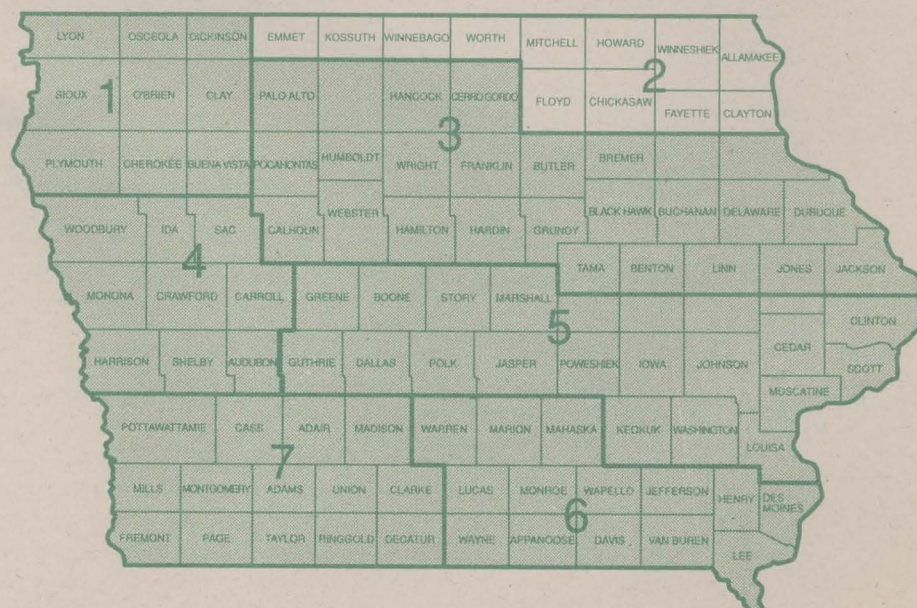


Table 2. Averages of 1996-97 and 1995-97 of Varieties Tested in District 2.
LSD for Yields Are 5 Bushels for 95-97 and 6 Bushels for 96-97.

95-97 Protein LSD = 0.2. 95-97 Oil LSD = 0.1. 95-97 Starch LSD = 0.3.
96-97 Protein LSD = 0.2. 96-97 Oil LSD = 0.1. 96-97 Starch LSD = 0.4.

Brand	Variety	Cross	Yield Bu/A		Moisture Pct		Root Ldg Pct		Stalk Ldg Pct		Drop Ear Pct		Stand Pct		Protein Pct		Oil Pct		Starch Pct		Variety	Brand	
			95-97	96-97	96-97	95-97	95-97	96-97	95-97	96-97	95-97	96-97	95-97	96-97	95-97	96-97	95-97	96-97	95-97	96-97			
DEKALB	DK442	SX	146	148	18.4	18.4	0	1	7	6	1	0	91	91	8.5	8.4	3.7	3.7	60.2	60.4	DK442	DEKALB	
DEKALB	DK477	SX		155	19.3				3			0		93		8.0		3.2		61.0		DK477	DEKALB
*NK Brand	N4242	SX	145	150	19.5	19.5	0	0	4	4	0	0	87	91	8.1	7.9	3.2	3.2	61.4	61.8	N4242	*NK Brand	
*DEKALB	DK471	SX	147	147	20.1	19.7	0	0	4	3	0	0	89	88	8.1	8.1	3.5	3.4	60.7	60.9	DK471	*DEKALB	
Cargill	3677	SX	147	148	20.2	20.0	2	2	4	3	0	0	89	88	8.4	8.3	3.7	3.7	60.5	60.9	3677	Cargill	
Mycogen	2500	SX		153	20.3			0		4		0		93		8.4		3.1		60.9		2500	Mycogen
DEKALB	DK493	SX	150	153	20.5	20.2	1	1	4	3	0	0	92	92	8.1	8.0	3.4	3.4	60.8	61.0	DK493	DEKALB	
*NK Brand	N4640	SX	152	157	20.7	20.7	1	2	3	2	0	0	90	91	8.4	8.4	3.4	3.4	60.8	61.0	N4640	*NK Brand	
Dairyland	ST1401	SX		153	21.5			1		1		0		86		8.0		3.4		60.5		ST1401	Dairyland
Hill Seed	HSX1037	SX		145	21.5			0		1		0		86		8.2		3.5		60.4		HSX1037	Hill Seed
*Cargill	4127	SX	145	146	21.5	21.2	0	0	4	4	1	1	92	90	8.1	8.0	3.5	3.4	60.8	61.3	4127	*Cargill	
*Golden Harvest	H2377	SX	150	157	21.6	21.4	0	0	4	4	1	1	90	91	8.5	8.4	3.3	3.2	60.5	60.6	H2377	*Golden Harvest	
Agripro	AP9300	SX		150	21.7			1		1		0		91		8.2		3.4		60.5		AP9300	Agripro
Rainbow	X1036	MSX		148	21.7			1		2		0		91		7.9		3.4		61.0		X1036	Rainbow
NC+	2395	SX		151	21.8			2		1		1		92		8.2		3.6		60.4		2395	NC+
Epley	EX1450	SX	142	141	21.8	21.2	3	4	6	5	0	0	91	90	7.5	7.3	3.4	3.3	61.2	61.7	EX1450	Epley	
Terra	TR1026	SX		147	22.0			1		1		0		89		8.0		3.5		60.5		TR1026	Terra
Bioseed	9350	SX		153	22.0			0		2		0		87		8.5		3.5		60.8		9350	Bioseed
M/W Genetics	G7118	SX		145	22.0			1		1		0		87		8.1		3.3		60.5		G7118	M/W Genetics
Renze	6167	SX		149	22.1			1		2		0		92		8.0		3.5		60.7		6167	Renze
Agripro	AP9340	SX		141	22.1			0		3		0		85		7.8		3.2		61.3		AP9340	Agripro
*Pioneer	3730	SX	148	151	22.2	21.8	1	1	4	3	0	0	89	89	8.5	8.5	3.4	3.3	61.0	61.2	3730	*Pioneer	
SOI	9027	SX		144	22.3			1		2		0		90		8.3		3.4		60.6		9027	SOI
*Golden Harvest	H2390	SX	155	161	22.3	22.2	0	0	2	2	0	0	91	89	8.7	8.5	3.4	3.3	60.2	60.4	H2390	*Golden Harvest	
Trelay	5500	SX		142	22.5			0		4		2		89		8.6		3.4		60.5		5500	Trelay
Golden Harvest	H2382	SX	151	158	22.5	22.3	1	1	5	5	0	0	93	95	7.9	7.7	2.9	2.8	60.8	60.9	H2382	Golden Harvest	
Renk	RK641	SX		143	22.6			0		3		1		91		8.3		3.2		61.2		RK641	Renk
LG Seeds	LG2499	SX		149	22.7			0		3		0		91		9.2		3.4		60.2		LG2499	LG Seeds
Agripro	AP9363	SX		140	23.0			0		3		2		88		8.5		3.3		60.6		AP9363	Agripro
*Pioneer	3563	SX	153	152	23.1	22.8	1	1	4	4	0	0	93	93	7.6	7.6	3.7	3.6	61.0	61.3	3563	*Pioneer	
*DEKALB	DK512	SX	152	152	23.2	22.5	0	0	3	3	0	0	88	86	8.0	8.2	3.7	3.7	60.5	60.7	DK512	*DEKALB	
Garst	8640	SX		154	23.4			4		4		1		89		7.8		3.2		61.2		8640	Garst
M/W Genetics	G7350	SX	150	147	23.5	23.3	3	4	4	4	1	1	92	92	7.9	7.8	3.6	3.6	61.0	61.3	G7350	M/W Genetics	
Golden Harvest	H2441	SX	153	159	23.6	23.5	1	1	8	8	0	0	92	93	8.0	7.8	3.4	3.4	60.5	60.7	H2441	Golden Harvest	
Renk	RK696	SX	144	145	23.8	23.3	1	1	4	3	1	1	88	88	7.5	7.3	3.5	3.4	61.0	61.5	RK696	Renk	
SOI	9074	SX		150	23.9			1		2		0		90		6.9		3.4		61.4		9074	SOI
Bioseed	9410	SX		152	24.1			2		3		0		91		8.8		3.2		60.7		9410	Bioseed
*Cargill	4277	SX	139	135	24.4	23.9	1	0	4	3	2	2	93	95	9.1	9.3	3.5	3.3	60.2	60.4	4277	*Cargill	
Golden Harvest	H2478	SX		167	24.5			1		4		0		91		7.8		3.3		60.6		H2478	Golden Harvest
Renk	RK708	SX	145	151	24.6	23.8	2	3	3	2	0	0	84	88	7.9	7.7	3.5	3.4	60.6	60.9	RK708	Renk	
Viking	4420	SX	146	149	24.8	24.1	1	2	4	3	1	1	91	92	7.3	7.1	3.5	3.5	61.2	61.6	4420	Viking	
Cornelius	C545	SX		157	24.8			1		3		0		89		8.3		3.6		60.3		C545	Cornelius
Dairyland	ST1407	SX	150	150	24.9	24.1	2	2	4	3	1	0	90	89	7.8	7.8	3.6	3.5	60.6	60.9	ST1407	Dairyland	
Pfister	2010	SX		156	24.9			1		3		1		89		7.7		3.5		60.5		2010	Pfister
DEKALB	DK580	SX	158	161	25.0	24.7	0	0	9	10	0	0	91	91	8.0	8.0	3.5	3.5	60.4	60.5	DK580	DEKALB	
Ottillie	4810	SX		161	25.1			2		3		1		87		7.5		3.2		61.0		4810	Ottillie
SOI	9045	SX	149	148	25.2	24.3	3	3	3	3	0	0	90	90	7.6	7.5	3.5	3.5	60.7	61.0	9045	SOI	
Fontanelle	4193	SX	150	149	25.2	24.8	0	0	2	2	0	0	90	91	7.8	7.7	3.5	3.4	61.1	61.4	4193	Fontanelle	
Mark	MRK97109	SX		164	25.2			2		3		0		83		7.5		3.2		60.5		MRK97109	Mark
Kruger	9709	SX		161	25.3			3		5		1		88		7.4		3.2		60.9		9709	Kruger
Crows	365	SX	131	134	25.4	25.1	1	1	4	4	1	1	84	92	8.6	8.7	3.5	3.4	60.1	60.2	365	Crows	
Bioseed	9470	SX	149	150	25.6	25.0	1	1	4	3	0	0	86	87	8.5	8.5	3.5	3.5	60.2	60.5	9470	Bioseed	
Cornelius	C521	SX		159	25.8			2		4		1		89		7.4		3.2		60.9		C521	Cornelius
Agripro	AP9460	SX		158	25.8			1		5		1		87		7.6		3.4		60.6		AP9460	Agripro
Cargill	5677	SX	156	158	26.0	25.4	0	1	8	9	0	0	92	94	8.6	8.7	3.4	3.4	60.1	60.2	5677	Cargill	
Pfister	2248	SX	144	143	26.1	25.1	0	0	3	3	0	0	86	86	8.0	7.9	3.5	3.4	61.0	61.4	2248	Pfister	
Ottillie	2453	SX		154	26.1			0		2		0		86		7.4		3.3		60.8		2453	Ottillie
Mark	MRK96111	SX		164	27.4			1		3		0		92		7.7		3.4		60.3		MRK96111	Mark
Crows	445	SX	149	145	28.3	27.2	1	1	4	4	1	0	92	92	7.6	7.6	3.5	3.5	60.6	60.8	445	Crows	
Mark	MRK97112	SX		161	28.5			2		2		0		80		7.6		3.6		60.4		MRK97112	Mark
Dairyland	ST1410	SX		155	28.6			3		3		1		90		7.9		3.4		59.9		ST1410	Dairyland
Dairyland	ST1412	SX		165	28.7			3		2		0		92		7.4		3.4		61.0		ST1412	Dairyland
Average of All Entries			148.2	151.4	23.5	22.8	1.0	1.2	4.4	3.3	0.5	0.5	89.9	89.7	8.1	8.0	3.5	3.4	60.7	60.8	Average of All Entries		
Average of Check Hybrids			148.7	150.7																			

* = Check Hybrid Entered by Iowa State University. SX = Single Cross. MSX = Modified Single Cross. 3X = 3-Way Cross. 4X = 4-Way Cross. SXB = Blend of Single Crosses.

District 2

Designations Identifying Brands in the Test

Table 1. Average Performance of Varieties Tested in District 2. 29,000 Planting Rate. LSD for 1997 Yield in Bushels is 10, for 1996 is 9, and for 1995 is 9. 1997 Protein Pct LSD = 0.3. 1997 Oil Pct LSD = 0.2. 1997 Starch Pct LSD = 0.5.

Brand	Variety	Cross	Yield Bu/A			Moisture Pct			Root Ldg Pct			Stalk Ldg Pct			Drop Ear Pct			Stand Pct			Protein Pct			Oil Pct			Starch Pct			Variety	Brand
			1995	1996	1997	1997	1996	1995	1997	1996	1995	1997	1996	1995	1997	1996	1995	1997	1996	1995	1997	1996	1995	1997	1996	1995	1997	1996	1995		
DEKALB	DK442	SX	141	157	138	18.4	18.4	18.4	1	0	0	5	7	9	0	0	1	86	97	91	8.0	8.7	8.7	3.7	3.7	3.8	60.7	60.2	59.9	DK442	DEKALB
DEKALB	DK449	SX				135	18.4		0			3						88			7.9			3.7			61.1			DK449	DEKALB
M/W Genetics	G6970	SX				134	18.6		1			3						83			8.1			3.6			61.2			G6970	M/W Genetics
DEKALB	DK477	SX	159			152	18.7	19.9	0	0		3	2		0	0		91	94		7.6	8.4		3.2	3.2		61.4	60.5		DK477	DEKALB
Cornelius	C246	SX				155	18.7		2									86			7.4			3.5			61.1			C246	Cornelius
Pioneer	3753	SX				154	18.8		2			3			0			91			7.6			3.5			61.4			3753	Pioneer
Epley	EX1100	SX				132	19.0		1			6			1			86			8.0			3.4			61.4			EX1100	Epley
Golden Harvest	H2309	SX				149	19.2		1			3			3			88			8.3			3.6			60.4			H2309	Golden Harvest
Crows	172	SX				154	19.2		3			2			1			88			7.8			3.6			61.1			172	Crows
KSC/Challenger	9899	SX				151	19.2		1			3			1			88			7.6			3.6			60.2			9899	KSC/Challenger
NC+	1487	SX				146	19.2		2			3			0			86			7.7			3.7			61.2			1487	NC+
Golden Harvest	H2315	SX				141	19.2		1			4			2			86			8.0			3.1			61.2			H2315	Golden Harvest
Prairie Gold	PG1520	SX				142	19.2		1			3						81			7.6			3.4			61.4			PG1520	Prairie Gold
*NK Brand	N4242	SX	135	152	147	19.3	19.8	19.4	0	0	0	3	4	3	1	0	0	87	95	79	7.7	8.1	8.3	3.2	3.1	3.3	62.0	61.6	60.6	N4242	*NK Brand
Pioneer	37851	SX				150	19.3		4			8			3			87			7.8			3.7			60.5			37851	Pioneer
MycoGen	2500	SX				151	19.6	21.1	1	0		2	6		0			89	97		7.8	8.9		3.2	2.9		61.3	60.6		2500	MycoGen
Renze	6078	SX				143	19.6		1			4			1			85			7.7			3.4			61.6			6078	Renze
Renze	6086	SX				154	19.6		2			5			0			88			8.2			3.5			61.7			6086	Renze
*DEKALB	DK471	SX	148	152	142	19.6	20.5	18.8	1	0	0	3	3	7	0	0	0	81	95	91	8.1	8.1	8.1	3.4	3.4	3.5	61.2	60.5	60.4	DK471	*DEKALB
Fontanelle	3946	SX				144	19.7		3			3			0			83			7.5			3.4			61.3			3946	Fontanelle
Fontanelle	3977	SX				154	19.7		5						0			88			8.3			3.4			60.7			3977	Fontanelle
Desoy	9898	SX				154	19.8		4			6			0			86			7.9			3.5			61.0			9898	Desoy
Biosseed	9371	SX				150	19.9		0			3			1			84			7.5			3.3			61.3			9371	Biosseed
Epley	EX1160	SX				145	20.0		5			2			0			86			7.7			3.5			61.2			EX1160	Epley
Cargill	4111	SX				159	20.1		6			3			0			86			7.9			3.7			61.3			4111	Cargill
Hawkeye Hybrid	EXP96090	SX				149	20.1		4			3			1			88			7.7			3.5			61.3			EXP96090	Hawkeye Hybrid
DEKALB	DK493	SX	144	159	147	20.1	21.0	19.5	1	1	0	4	3	4	0	0	1	89	95	99	7.7	8.4	8.2	3.4	3.4	3.5	61.4	60.6	60.4	DK493	DEKALB
Cargill	3677	SX	145	143	168	20.1	20.2	19.5	3	1	2	7	3	5	0	0	1	89	88	91	7.8	8.5	8.6	3.7	3.7	3.8	61.4	60.4	59.9	3677	Cargill
Viking	6801	SX				157	20.2		1			3			0			81			8.1			3.5			61.0			6801	Viking
Agripro	AP9300	SX				147	20.3	23.1	3	0		2	0		0			85	97		7.9	8.5		3.5	3.3		60.5	60.5		AP9300	Agripro
CFS	4003	SX				138	20.3		1			5			0			81			7.7			3.5			61.2			4003	CFS
*NK Brand	N4640	SX	143	157	158	21.1	21.1	20.5	0	1	1	2	3	3	1	0	0	81	95	89	8.0	8.8	8.5	3.4	3.4	3.5	61.6	60.3	60.3	N4640	*NK Brand
Cargill	3911	SX				133	20.5		1			4			1			85			7.9			3.5			61.8			3911	Cargill
Dairyland	ST1401	SX				147	20.5	22.5	1	0	1	1	1		0	0		84	87		7.8	8.2		3.6	3.2		60.3	60.7		ST1401	Dairyland
Rainbow	Y1035	MSX				145	20.6		1			1			0			83	94		7.5	8.4		3.5	3.2		61.2	60.4		Y1035	Rainbow
MycoGen	2545	SX				146	20.7		3			2			0			85			7.8			3.6			61.0			2545	MycoGen
Hill Seed	HSX1037	SX	145	148	148	20.8	22.2		0	0	1	1	1		0	0		88	84		7.8	8.5		3.7	3.4		60.8	60.2		HSX1037	Hill Seed
Mark	MRKEX100	SX				138	20.8		0			4			1			76			8.3			3.4			60.3			MRKEX100	Mark
LG Seeds	LG2497	SX				148	20.8		0			2			0			88			7.9			3.6			61.0			LG2497	LG Seeds
Golden Harvest	H2359	SX				149	20.9		1			1			0			88			7.6			3.0			61.5			H2359	Golden Harvest
Prairie Gold	PG1527	SX				134	20.9		0			5			0			78			8.7			3.4			60.5			PG1527	Prairie Gold
CFS	4325	SX				159	20.9		1			2			0			91			7.9			3.7			61.3			4325	CFS
*Golden Harvest	H2377	SX	137	159	159	21.0	22.2	20.9	0	0	0	4	3	6	1	0	0	85	97	89	7.9	8.8	8.9	3.3	3.1	3.4	60.9	60.4	60.1	H2377	*Golden Harvest
M/W Genetics	G7118	SX				138	21.1	23.0	1	0	1	1	1		0	0	0	88	86		7.8	8.4		3.4	3.1		60.8	60.2		G7118	M/W Genetics
Golden Harvest	H2390	SX	143	168	162	21.1	23.5	21.9	1	0	0	2	3		0	0	0	85	94	84	7.9	9.1	9.1	3.4	3.3	3.5	60.9	59.9	59.8	H2390	Golden Harvest
*Cargill	4127	SX	143	145	146	21.1	21.9	20.6	0	0	0	5	3	4	2	0	2	88	93	94	7.6	8.4	8.4	3.5	3.4	3.6	61.7	60.9	60.0	4127	*Cargill
Biosseed	9350	SX				149	21.6	22.8	1	0	2	3			0	0		88	87		8.1	8.9		3.5	3.5		61.4	60.3		9350	Biosseed
NC+	2395	SX				150	21.2	22.4	3	1		2	1		0	1		89	94		8.0	8.5		3.7	3.4		60.7	60.2		2395	NC+
Renze	6167	SX				149	21.2	22.0	1			2			0			87	88		8.0	8.4		3.6	3.4		61.0	60.4		6167	Renze
Garst	N4673	SX				161	21.2		1			2			0			86			8.2			3.2			60.7</				

Grain moistures shown in Tables 1 and 2 are indications of maturity and natural drying rate. Maturity of varieties entered generally ranged from short to full season. Yield comparisons should be made among varieties of similar maturity.

It is important to select varieties having stable performance over a range of environmental conditions. High yields for two or more consecutive years indicate stable performance. Supplemental yield and agronomic information about specific varieties may be obtained from seed corn dealers, crop consultants, and from neighbors who have grown these varieties.

The protein, oil, and starch percentage data (Tables 1 and 2) are quality traits important to different end-users of corn. For feed, protein is of primary interest; for wet-mill processing (ethanol and sweeteners), oil and starch content are important. Several firms have begun testing these characteristics on an exploratory basis. In 1995, a network of 15 Iowa grain elevators acquired near-infrared equipment and are testing inbound corn at their facilities.

Whole-grain near-infrared equipment measures composition of unground corn kernels in 1 to 1.5 minutes per sample. The equipment measures moisture simultaneously with composition. Using these instruments, country elevators can test and segregate grain as it is received. Obviously, all compositional factors cannot be high in the same hybrid. The grain market is exploring segmentation (identity preservation), which is the production and marketing of certain hybrids for specific uses. This is an important change from the generic commodity approach now used.

The economic impact of compositional factors can be significant. Corn protein trades off with other protein sources in many feed rations. At \$200 per ton for 44 percent protein soybean meal, the value of a 1 percent increase (e.g., from 8 percent to 9 percent) in corn protein is about 12 cents per bushel of corn. Likewise, an additional percent of oil yields about 14 cents per bushel in increased oil output in a wet processing plant or when substituted for white grease in feed rations. The additional ethanol or sweetener from an extra percent of starch provides 8 to 10 cents per bushel more revenue. Producers feeding livestock are in the best position to capture immediate benefits from these composition data. Country elevators with feed mills also have the ability to capitalize on increased protein in corn. The Iowa Corn Growers Association has prepared a publication to aid growers in using the nutrient data in the *Iowa Crop Performance Test—Corn* reports: *Nutrient Content and Feeding Value of Iowa Corn*, Iowa Corn Growers Association, Des Moines, Iowa 50265.

Hybrids with similar yields and agronomic characteristics may not be identical in corn protein. Therefore, feed costs can be reduced by selecting higher protein hybrids from a group with similar yield potential. Weather and soil conditions affect composition, but the relative ranking of hybrids does not change greatly. A higher protein hybrid will be higher than average regardless of environmental conditions that raise or lower the averages. The protein percentages reported are measures of crude protein and may not give an accurate indication of feed value if feed rations are balanced on individual amino acids rather than crude protein content.

Order Form: Iowa Crop Performance Test—Corn Hybrid Selection Program

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1997 Field Data

The District 2 test was planted on farms operated by Mike Branstad and Gary Wunder near Thompson in Winnebago County, Louis Peters near Colwell in Floyd County, and the Herman brothers near Waukon in Allamakee County. Field data are presented in Table A.

At planting time, subsoil moisture for the district was generally adequate but was excessive in a few areas. Rainfall for the district was below normal in April and well below normal in June. In July, August, and September, the Winnebago County location received near normal rainfall while the other two locations received way above normal rainfall in July and below normal rainfall in August and September. In May, rainfall was variable, with the Winnebago County location receiving below normal rainfall, the Floyd County location receiving well below normal rainfall, and the Allamakee County location receiving above normal rainfall. Temperatures for the district were way below normal in May and well below normal in August. At the Winnebago County location in April, June, July, and September, temperatures were below normal, way above normal, above normal, and above normal, respectively. At the other two locations for the same months, temperatures were way below normal, near normal, well below normal, and near normal, respectively. The average district yield was 14 bushels per acre above the mean of the five preceding years' averages. Average location yields are listed in Table A.

Table A. Field Data

	Branstad Farm Webster silty clay loam			Peters Farm* Oran loam			Herman Farm Downs silt loam		
Fertilizer applied, lb.	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
Plowdown	—	—	—	—	—	—	18	46	80
Preplant	5	23	120	140	52	120	130	—	—
Sidedress	82	—	—	—	—	—	—	—	—
Starter	10	34	—	—	—	—	7	21	7
Total	97	57	120	140	52	120	155	67	87
1996 crop	Soybeans			Soybeans			Soybeans		
Row width	30 inches			30 inches			30 inches		
Planting date	May 6			April 25			April 28		
Harvest date	Oct. 31			Oct. 9 & 10			Nov. 6 & 7		
Average yield	145 bu/a			167 bu/a			137 bu/a		

*Field sampled for protein, oil, and starch percentage data.

Other Reports

Separate reports for variety performance are available for each district shown in Figure 1. A limited supply of these publications is available at your county extension office or from Extension Distribution Center, 119 Printing and Publications Building, Iowa State University, Ames, Iowa 50011. Also, an IBM compatible diskette containing these data along with a hybrid selection program is available from Extension Software Services, 110 EES Bldg., Haber Road, Iowa State University, Ames, Iowa 50011-3070. Along with all of the information as it appears in the written reports, the computer diskettes include computer programs that allow farmers to insert their own drying and shrink costs, expected price of corn, and final moisture percentage after drying. Using these specific criteria, the program calculates an adjusted economic value for each hybrid in the test. Farmers can then determine which hybrids might best fit their own production practices and provide the most profit. The computer program also can sort the hybrids by yield, moisture, adjusted value, root lodging, stalk lodging, dropped ears, protein, oil, starch, or brand and then print the data as sorted. An IBM personal or compatible computer supporting MS-DOS 2.0 or higher, with at least 512K memory, is required. The cost of this diskette is \$25. All seven districts can be purchased for \$150. Order forms, Pm-660-OF-97, are available from county extension offices and included in the printed reports.

The 1997 *Iowa Crop Performance Test—Corn*:

Pm-660-1-97 District 1 Pm-660-4-97 District 4 Pm-660-6-97 District 6
Pm-660-2-97 District 2 Pm-660-5-97 District 5 Pm-660-7-97 District 7
Pm-660-3-97 District 3

File: Agronomy 2-2

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Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Stanley R. Johnson, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.